Methods: We studied 235 consecutive patients who completed phase II CRET and compared data from 73 obese patients (BMI >/= 30 kg/m2) with 72 lean patients (BMI < 25 kg/m2).
Results: At baseline, obese patients had higher levels of LDL cholesterol (114 +/- 59 vs 100 +/- 27 mg/dl; p=0.07), abdominal girth (43.6 +/- 4.9 vs 35.2 +/- 4.0 inches; p<0.0001), % body fat (33.7 +/- 7.6 vs 24.9 +/- 7.3%; p<0.0001), and a much higher prevalence of MS (61% vs. 26%; p<0.001) and lower levels of HDL cholesterol (47.3 +/- 16.8 vs. 36.7 +/- 10.1 mg/dl; p<0.0001) than did the lean patients. In addition, the triglyceride (TG)/ HDL ratio, a sensitive indicator of insulin resistance, was also considerably greater in the obese group (5.4 +/- 4.5 vs 3.0 +/- 1.8; p<0.0001). In the entire cohort, there was a weak, but significant, correlation between BMI and high-sensitivity C-reactive protein (HSCRP) (r=0.12; p=0.05). Although levels of HSCRP appear 37% higher in obese patients (7.4 +/ - 8.4 vs 5.4 +/- 7.9 mg/l), these differences were not statistically significant (p=0.15). Following CRET, obese patients had significant improvements in HDL cholesterol (+7%; p<0.001), HSCRP (-42%, p<0.01), peak VO2 (+9%; p<0.001), quality of life score (+12%; p<0.0001), several scores of behavioral characteristics (depression, anxiety, and somatization; all p<0.01), as well as obesity indices: weight (–2%; p<0.01), BMI (-2%; p<0.01), and % fat (-5%; p=0.03). The TG/HDL ratio (-17%; p=0.08) and the prevalence of MS also fell (61% to 52%) in the obese group following CRET.
Conclusions: Obese patients with CAD have markedly abnormal risk profiles, characterized by MS and high levels of inflammation, which improve significantly following formal CRET. These data provide further support for formal phase II CRET in the secondary prevention of CAD in obese patients.

1111-64 Normalization of Abnormal T Waves During Stress Testing Does Not Identify Patients With Reversible Perfusion Defects

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Background: The observation that abnormal T waves may become normal during stress testing , so called "pseudonormalization" (PNL) is well known but it remains uncertain whether PNL during stress should be considered evidence for myocardial ischemia .
Methods: To better define the significance of PNL during stress we analyzed the electrocardiograms and imaging results from 2137 patients undergoing stress testing (treadmill or dobutamine) and myocardial perfusion imaging with Tc99m Sestamibi.
Results: Abnormal T waves were present at rest in 638 patients of whom 71 patients (11%) had PNL during stress and 567 patients (89%) did not.

IMAGING RESULTS

DEFECT	PNL+ N=71	PNL- N=567	P
NONE	48%	46%	NS
FIXED	25%	30%	NS
REVERSIBLE	27%	24%	NS

Conclusion: Normalization of abnormal resting T waves occurs infrequently during stress testing and its presence or absence does not predict the results of myocardial imaging. It seems likely therefore that T wave normalization during stress testing is a nonspecific finding and since the majority of patients in whom T wave normalization does occur do not have a reversible myocardial perfusion defect it should not be considered as evidence for stress induced myocardial ischemia.

1111-65 Physical Activity Exerts Benefits in Coronary Heart Disease Through Autonomic Nervous System Modulation

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Background. Exercise training has assumed a major role in both the primary and secondary prevention of coronary heart disease (CHD). Which mechanism mediates these benefits is still a matter of debate. This study sought to determine whether the intensity and frequency of recreational activity may influence autonomic nervous system balance, and exerts possible benefits in high risk CHD pts. **Methods.** 105 pts were selected from the "Italian Study about Prognosis of Unstable Angina" (SPAI) which was designed to assess factors able to early identify pts at high risk for subsequent coronary events. Pts were followed for 6 months. Exclusion criteria were: previous history of CHD, low ejection fraction (<40 %), diabetes mellitus, and atrial fibrillation. Health habits, medical history, recreational and work-related total physical activity as recorded by questionnaires were obtained at baseline and at 6 months follow-up. Vagal and sympathetic activities were assessed, at admission, by time domain measurements of heart rate variability (pNN50 and SDANN, respectively).
Results. Of the105 pts 32 (Gr1) had a major coronary event (6 deaths, 8 non fatal AMI, 8 hospital readmission due to documented ischemic attacks, and 10 urgent CABG or PTCA). The remaining 73 showed good clinical outcome, and served as control (Gr2). Total weekly energy expenditure was stratified as low (< 600 kcal/wk), moderate (600-1500 kcal/wk), high (> 1500 kcal/wk). Twenty of the 32 Gr1 pts (62%) and 10 of the 73 Gr2 pts (14%) expended less than 600 kcal/wk. Analysis of the HRV showed that extremely low (<3%) values of pNN50 predicted mortality and total events. A pNN50 <3% was found in 18/32 Gr1 pts (56%) vs 2/73 Gr2 pts (0.8%). Significant relationship was found between kcal/wk and pNN50. These findings persisted after adjustment for other life style variable. **Conclusions**. (1) A shift in the autonomic balance with a loss of vagal tone (pNN50 <3%) may be observed in many pts having adverse outcome following unstable angina. (2) This could explain coronary vascular instability, and more subsequent coronary events. (3) Even moderate physical activity is associated with favorable sympathetic-parasympathetic balance, and better CHD prognosis.

1111-66 Effects of Acute Exercise on the Fibrinolytic and Coagulative System in Patients With Chronic Ischemic Heart Disease

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Background: As physical activity affects hemostasis, we aimed to find out whether acute physical acivity leads to a prothrombotic state in patients with coronary artery disease (CAD).
Methods: The study included 40 consecutive untrained patients with a positive treadmill exercise test and 15 healthy controls with a negative exercise test. Blood samples for testing global fibrinolytic capacity (GFC) and prothrombin fragment 1+2 (PF1+2) were drawn immediately before exercise, at peak exercise and 2 hours after rest. Patients were evaluated with coronary angiography.
Results: Patients were divided into 2 groups according their coronary angiograms (Group I with CAD). In all three groups GFC increased significantly with peak exercise and thereafter declined again reaching pre-exercise values within 2 hours. The increase in Group I GFC was less than in both Group II and controls (p=0.001 and p=0.0001,respectively), whereas the increase in Group II GFC was less than that observed in controls (p=0.001). At peak exercise PF1+2 increased in all three groups. However, while the PF1+2 of Group II and controls declined to pre-exercise levels within 2 hours after exercise, they were still significantly high in Group I (p=0.0001).

	Before Exercise		Peak Exercise		2 hours After Recovery	
	GFC (µg/mL)	PF 1+2 (nmol/L)	GFC (µg/mL)	PF 1+2 (nmol/L)	GFC (µg/mL)	PF 1+2 (nmol/L)
Group I (n=24)	8,10±2,60	1,13±0,41	12,15±5,04	1,94±0,07	8,57±2,62	1,69±0,06
Group II (n=16)	14,88±3,65	0,72±0,20	19,04±4,29	1,93±0,08	14,99±3,37	0,74±0,22
Control (n=15)	19,65±7,14	0,79±0,10	26,39±7,03	1,95±0,07	19,45±6,22	0,78±0,11

Conclusion: Acute exercise disturbs the equilibrium between coagulation and fibrinolysis in favour of coagulation in untrained patients with CAD. Altough more pronounced in CAD patients all patients with a postive exercise test have an attenuated fibrinolytic response to acute exercise.

1111-67 The Addition of Posterior or Right-Sided Chest Leads Does Not Enhance the Sensitivity of Stress Testing

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Background: Exercise treadmill testing has limited sensitivity for the detection of coronary artery disease. Recently, there has been interest in using non-standard electrocardiographic (ECG) leads during exercise testing.
Methods: We consecutively enrolled patients undergoing exercise myocardial imaging with four additional leads recorded (V_4R, V_7, V_8 and V_9). The test characteristics of the 12-lead, the 15-lead (12-lead, V_7, V_8, V_9), and the 16-lead (12-lead, V_4R, V_7, V_8 , V_9) ECG were compared with stress imaging.
Results: There were 807 subjects who met entry criteria. A total of 170 subjects had an abnormal 12-lead ECG during exercise. The addition of 3 posterior leads resulted in 7 additional subjects having an abnormal ECG response to exercise. The addition of V_4R resulted in only 1 additional patient having an abnormal ECG during exercise. The sensitivity for detecting ischemia as determined by stress imaging was 41%, 44%, and 44% (p=ns) for the 12-lead, 15-lead, and 16-lead ECG, respectively. In those with catheterization data (n=147), the sensitivity was 47%, 51%, and 51% (p=ns) for the 12-lead, 15-lead, and 16-lead ECG, respectively. The sensitivity of imaging modalities was 77% (p<0.001 compared to 12-, 15-, and 16-leads).
Conclusion: The addition of right-sided and posterior leads did not significantly increase the sensitivity of the ECG for the detection of myocardial ischemia. However, the addition of imaging to stress testing substantially increased the sensitivity for the prediction of coronary artery disease. Additional leads should not be used to replace imaging modalities for the detection of coronary artery disease.